



Tulia I

*A Flexible and Responsive
Storage & Generation Facility*

Tulia, TX - Compressed Air Energy Storage (CAES)



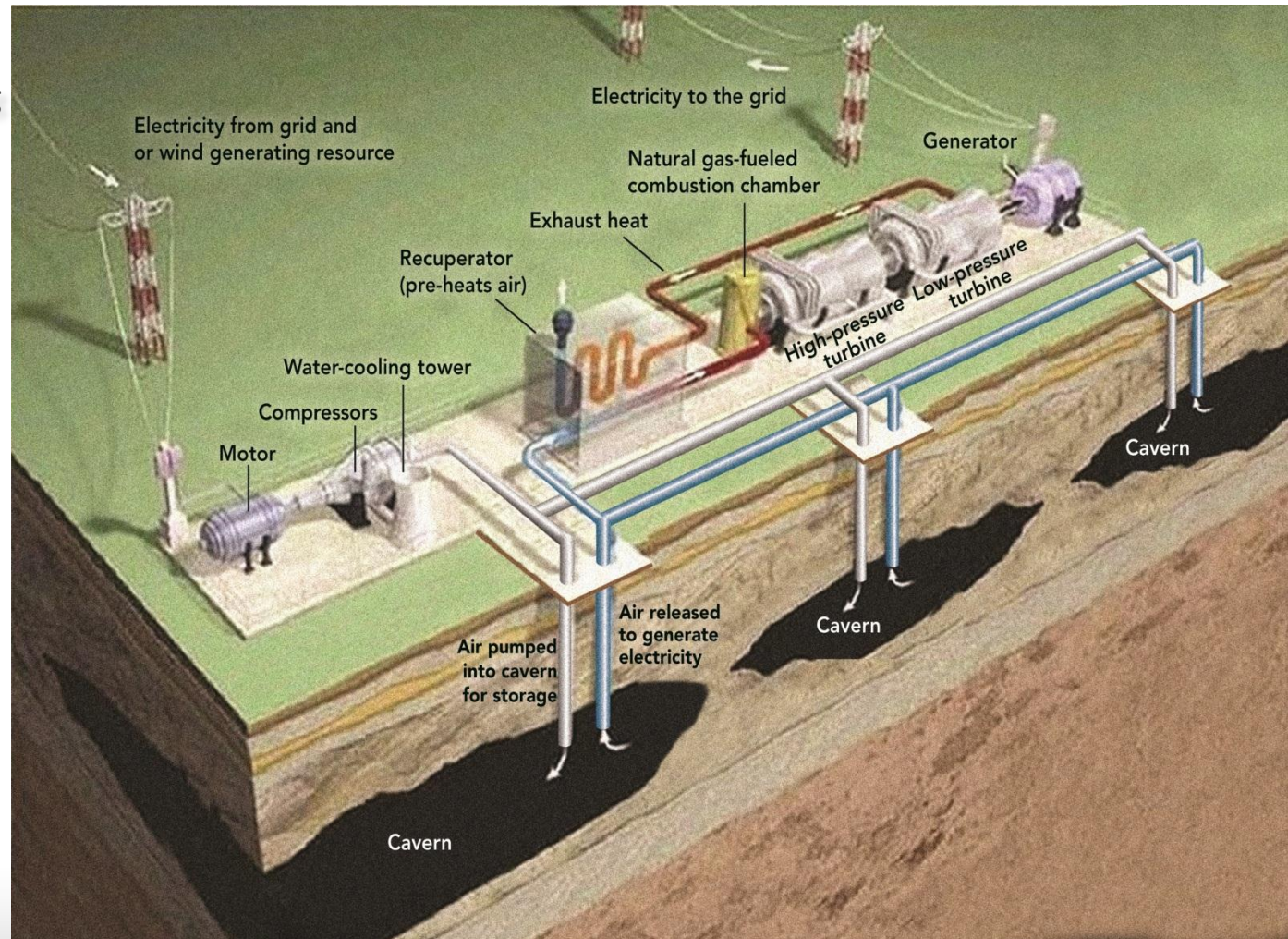
What is CAES?

PROPRIETARY AND CONFIDENTIAL



Commercially proven in two facilities, Compressed Air Energy Storage (CAES) is the most flexible technology for the bulk storage of electricity available today

- Two commercial-scale units have been operating reliably for two decades.
- Our configuration can store and generate simultaneously
- Can provide energy and ancillary services in the DAM and/or real-time market.
- Potential to store up to 100 hours of full power production for 270 MW
- Store energy in the off-peak and use it when and how you need it.



PowerSouth McIntosh CAES Site

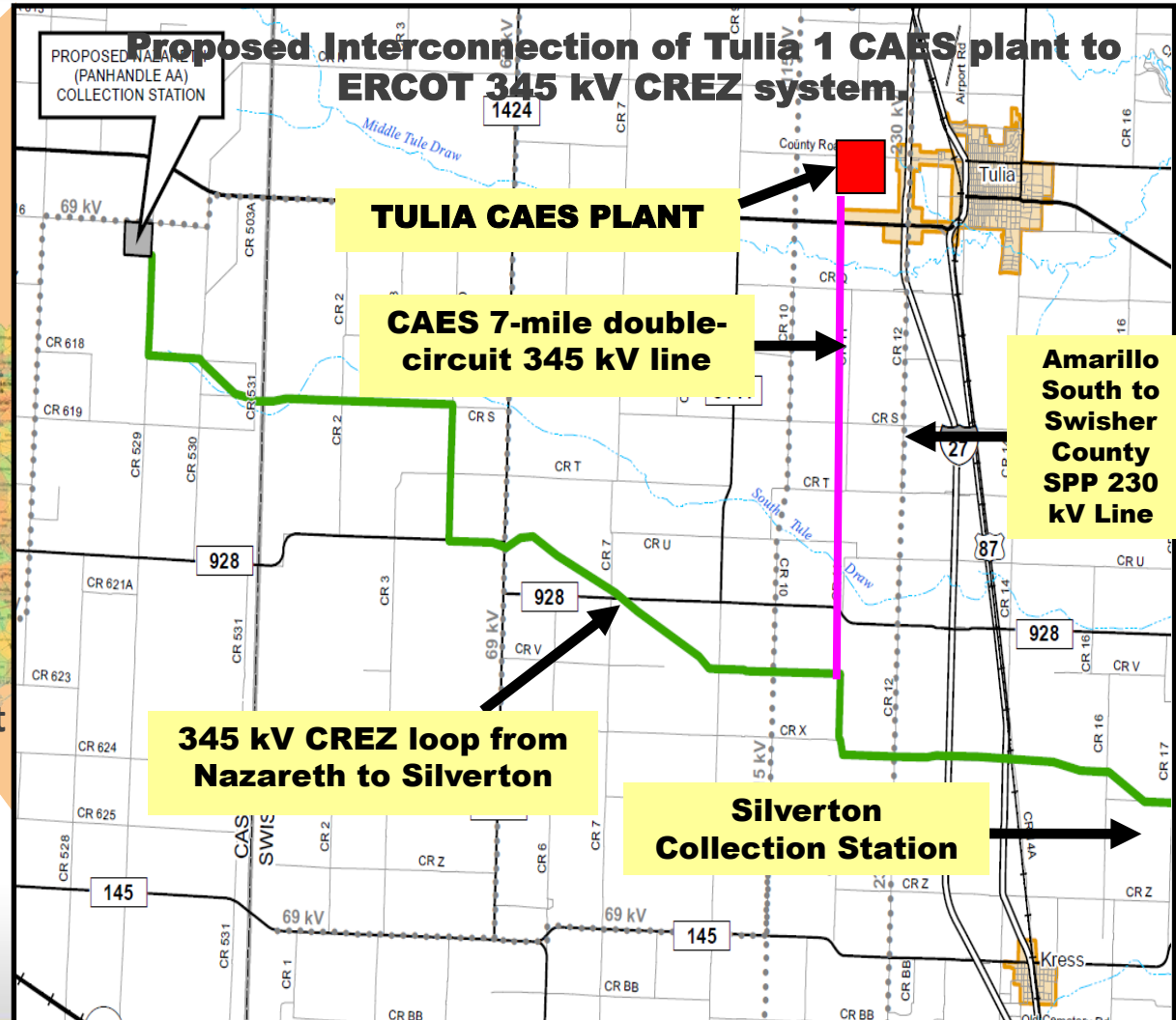
In Commercial Operation Since May 1991



The Right Place and Time in Texas

Right Mix of Infrastructure and Natural Resources

- The geology is right
- The wind is right
- The water is right
- The technology is right
- The electric transmission is right
- The gas transmission is right
- The potential revenue is right
- The regulatory foundation is right



Our Place in Texas

PROPRIETARY AND CONFIDENTIAL



PUCT Addresses Market Rules



- **PUCT and ERCOT Adopt Energy Storage Rule**
 - The purchase of charging energy is a wholesale, not a retail, transaction.
 - Charging energy will be settled using nodal pricing
 - Charging energy is not subject to allocation of ancillary services costs.
 - Charging energy is not subject to transmission costs.
 - ERCOT filed NPRR 461 on May 2, 2012 to implement the PUCT Rule.



Transmission Service Rates

25.192 Transmission Service Rates

- The PUCT excluded energy storage facilities from paying transmission costs like “other loads”.
- *This was an appropriate decision because Energy Storage Resources (ESRs) exist to serve load, like “other generators” which also do not pay transmission rates.*

PUCT Rules Addressing Energy Storage



25.501 Wholesale Market Design

— New language the Commission added to the rule:

(m) **Energy Storage.**

- (1) For a storage facility that has more than one delivery point, ERCOT shall net the impact of those delivery points on the ERCOT system for settlement purposes.
- (2) Wholesale storage occurs when electricity is used to charge a storage facility; the storage facility is separately metered from all other facilities including auxiliary facilities; and energy from the electricity is stored in the storage facility and subsequently re-generated and sold at wholesale as energy or ancillary services. Wholesale storage is wholesale load and ERCOT shall settle it accordingly, except that ERCOT shall settle wholesale storage using the nodal energy price at the electrical bus that connects the storage facility to the transmission system, or if the storage facility is connected at distribution voltage, the nodal price of the nearest electrical bus that connects to the transmission system. Wholesale storage is not subject to retail tariffs, rates, and charges or fees assessed in conjunction with the retail purchase of electricity. Wholesale storage shall not be subject to ERCOT charges and credits associated with ancillary service obligations, or other load ratio share or per megawatt-hour based charges and allocations. The owner or operator of electric storage equipment or facilities shall not make purchases of electricity for storage during a system emergency declared by ERCOT unless ERCOT directs that such purchases occur.

PUCT Rules Addressing Energy Storage

25.501 Wholesale Market Design (cont.)

- The amendments to 25.501 clarified that ESRs are wholesale (not retail) market participants and as such should not be allocated retail-type charges.
- *This decision was tremendously important to make wholesale energy storage projects economically feasible in the ERCOT market.*
- The amendments to 25.501 clarified that ESRs should be settled at nodal prices both for energy withdrawals (charging) and injections (discharging).
- *This decision was necessary since “other loads” in ERCOT are settled on a zonal, rather than nodal, basis. Different settlement methodologies would have created unintended consequences (both good and bad) for ESRs.*
- The amendments to 25.501 prohibit ESRs from charging (withdrawing energy from the ERCOT grid) during system emergencies unless directed by ERCOT.
- *This decision addressed a concern of ERCOT and some market participants that ESRs could exacerbate high system load conditions.*
- *This should not happen anyway, since prices during scarcity periods should be high (thus discouraging energy withdrawals).*

The Right Answer for Texas



- Creates 270 MW of fully schedulable, dispatchable generation
- Makes energy generated at times of low demand and/or low cost available for sale and use as ancillary services and/or energy . . . at anytime
- Incorporates the next generation of proven and reliable CAES technology
- Extremely flexible and responsive ramp rates. . . energy can be dispatched at virtually a moment's notice . . . load and generation can be quickly adjusted
- Environmental benefits
- Compelling economics
- Strong team consistently meeting our milestones



The Right Answer for Texas

- **Creates 270 MW of dispatchable generation at the right time and in the right place**
 - Part of the solution to the Resource Adequacy issue in Texas
 - Market barriers have been removed by PUCT/ERCOT rulemakings
 - On-site expansion to 810 MW possible
- **Makes energy generated at times of low demand and/or low cost available for sale and use as ancillary services and/or as energy . . .**
 - Converts energy from wind and other renewable resources into a dispatchable energy product for use at whatever time the market wants.
 - Reduces transmission grid bottlenecks and supports grid/CREZ expansion
- **Incorporates the next generation of proven and reliable CAES technology**
 - The basic design and components have performed reliably in Alabama and Germany for 20+ yrs.
 - Chamisa and Dresser-Rand have made improvements in cavern design, train configuration, system models and systems controls.



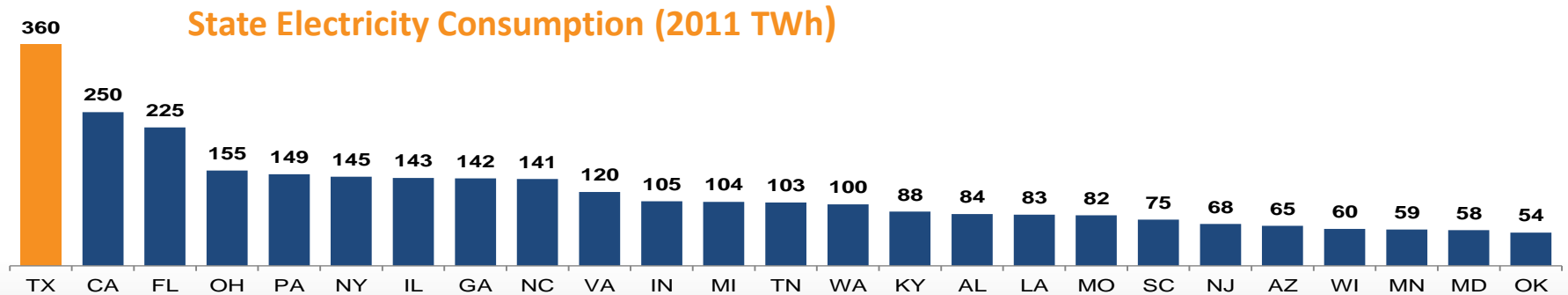
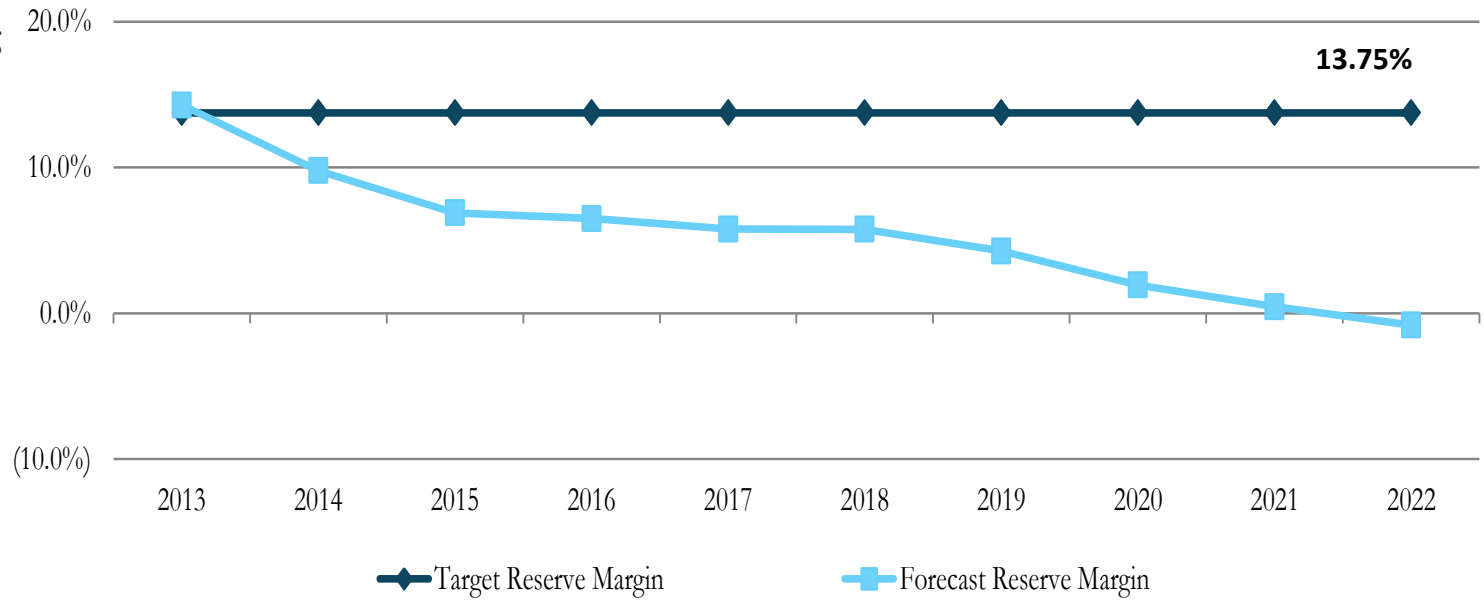
The Right Answer for Texas

- **Extremely flexible and responsive . . . energy can be dispatched on virtually a moment's notice . . . load and generation can be quickly adjusted**
 - Start to full power in 10 minutes on the generation side; 4 minutes on the compression side
 - Wide range of products: peaking and base load energy, tolling and ancillary services
- **Environmental benefits**
 - Low emissions profile
 - Low water use
- **Compelling economics**

The Right Time for Texas



- Demand for electricity is rising steadily in TX.
- Limitations on water use are increasing.
- Storage options can make electricity generated by off-peak wind available during period of high demand.

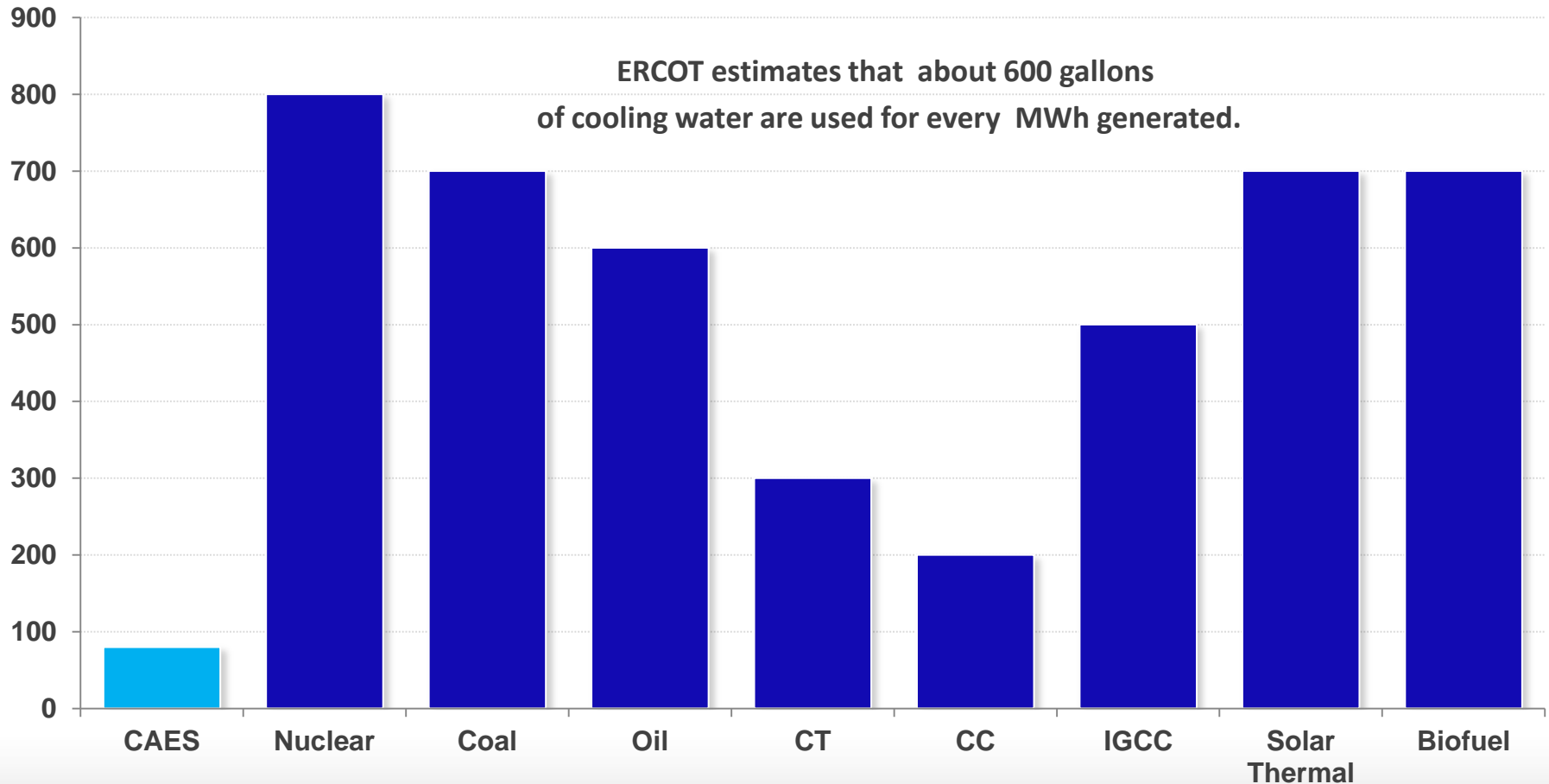


Source: ERCOT, Report on the Capacity, Demand, and Reserves in the ERCOT Region (May 2012)

Dramatic Environmental Benefits: Water Use



Cooling Water Used (gal/MWh for Evaporation and Blowdown)



Source: EPRI based on evaporation and blowdown.



Strong Team

Project Development

- Chamisa Energy LLC
 - Garrett Thornburg, Chairman and CEO
 - Alissa Oppenheimer, Managing Director
 - Eliot Cutler, Principal

Project Design and Equipment Vendor

- Dresser-Rand Inc.

Site Characterization:

- Lonquist & Co., LLC
- Glorieta Geoscience
- Itasca International Inc.

Power Marketing and Transmission:

- WH Power Consultants
- RnR Engineering, LLC
- Crescent Power, Inc.

Financial Advisors and Contract Negotiations

- Perella Weinberg Partner LP
- Vinson & Elkins LLP

Lawyers and Consultants:

- Stahl, Bernal & Davies LLP
- McGinnis, Lochridge & Kilgore LLP
- Stratus Energy Group LLC
- Murin Environmental

Contact Information



Alissa Oppenheimer,
Managing Director
Chamisa Energy, LLC
2300 North Ridgetop Road
Santa Fe, New Mexico
87506

ao@chamisaenergy.com

505-467-7800

www.chamisaenergy.com